

# BIT500

## SAP Java Process Integration

### COURSE OUTLINE

Course Version: 22

Course Duration:

# SAP Copyrights, Trademarks and Disclaimers

© 2023 SAP SE or an SAP affiliate company. All rights reserved.

No part of this publication may be reproduced or transmitted in any form or for any purpose without the express permission of SAP SE or an SAP affiliate company.

SAP and other SAP products and services mentioned herein as well as their respective logos are trademarks or registered trademarks of SAP SE (or an SAP affiliate company) in Germany and other countries. Please see <https://www.sap.com/corporate/en/legal/copyright.html> for additional trademark information and notices.

Some software products marketed by SAP SE and its distributors contain proprietary software components of other software vendors.

National product specifications may vary.

These materials may have been machine translated and may contain grammatical errors or inaccuracies.

These materials are provided by SAP SE or an SAP affiliate company for informational purposes only, without representation or warranty of any kind, and SAP SE or its affiliated companies shall not be liable for errors or omissions with respect to the materials. The only warranties for SAP SE or SAP affiliate company products and services are those that are set forth in the express warranty statements accompanying such products and services, if any. Nothing herein should be construed as constituting an additional warranty.

In particular, SAP SE or its affiliated companies have no obligation to pursue any course of business outlined in this document or any related presentation, or to develop or release any functionality mentioned therein. This document, or any related presentation, and SAP SE's or its affiliated companies' strategy and possible future developments, products, and/or platform directions and functionality are all subject to change and may be changed by SAP SE or its affiliated companies at any time for any reason without notice. The information in this document is not a commitment, promise, or legal obligation to deliver any material, code, or functionality. All forward-looking statements are subject to various risks and uncertainties that could cause actual results to differ materially from expectations. Readers are cautioned not to place undue reliance on these forward-looking statements, which speak only as of their dates, and they should not be relied upon in making purchasing decisions.

# Typographic Conventions

American English is the standard used in this handbook.

The following typographic conventions are also used.

This information is displayed in the instructor's presentation



Demonstration



Procedure



Warning or Caution



Hint



Related or Additional Information



Facilitated Discussion



User interface control

*Example text*

Window title

*Example text*

# Preparing for Your SAP Live Class

## Required Equipment for Your SAP Live Class

- PC or Mac
- Integrated or external web cam
- Headset with integrated mic
- Stable internet connection

You can test if your setup is working correctly by using this link: <https://sap.zoom.us/test>

We recommend that you connect two monitors to your PC so that you can manage the course content more efficiently. This will reduce the need for you to switch (alt+tab) between the applications we use in class.

## Getting the Most Out of Your SAP Live Class

- Make sure you have setup and thoroughly tested the SAP Live Class environment and resolved any issues well before the class begins. Refer to the separate instructions that you were sent for setup instructions and support contact information.
- Keep your web cam activated during the training sessions. You can switch it off during breaks if you prefer.
- Use a headset with an integrated mic to ensure a high-quality audio experience for both you and the other participants. Laptop speakers and mic produce poor quality sound and introduce background noise that can disturb the class.
- Make sure you are in a quiet area where you will not be disturbed.
- Be ready to use the mute feature to ensure any background noise does not disturb the class.
- Turn off email, phones, instant messaging tools, and clear other distractions away from your training area.
- Actively participate and prepare to be called on by name.
- Be patient waiting for a response to your chat messages.
- Always ask the instructor for assistance if you need help with an exercise. Don't get left behind.
- Be ready to begin class on time so you do not delay the start of each session.
- During breaks, make sure you take the opportunity to get out of your chair and stretch.
- Please raise any concerns relating to the SAP Live Class experience with your instructor at the time they arise so that they can be quickly addressed.

# Contents

## vii Course Overview

### 1 Unit 1: SAP Process Integration Architecture

- |   |  |
|---|--|
| 1 | Lesson: Explaining how the Recent Rebranding Displays in This Material   |
| 1 | Lesson: SAP Business Technology Platform (BTP)   |
| 1 | Lesson: Explaining the Enterprise Service Bus  |
| 1 | Lesson: Describing SAP Process Integration Architecture  |
| 1 | Lesson: Using the SAP NetWeaver Developer Studio (NWDS) 7.5  |
| 2 | Lesson: Explaining the Uses and Functionality of SAP Process Orchestration and the Advanced Adapter Engine (AEX) |

### 3 Unit 2: The System Landscape Directory (SLD)

- |   |  |
|---|--|
| 3 | Lesson: Maintaining Products and Software Components in the System Landscape Directory (SLD) |
| 3 | Lesson: Implementing Technical Systems in the SLD  |
| 3 | Lesson: Maintaining Business Systems for use in the Integration Directory (ID)               |

### 5 Unit 3: Interface Objects in the Enterprise Service Repository (ESR)

- |   |   |
|---|---|
| 5 | Lesson: Listing Options for Navigating the ESR                          |
| 5 | Lesson: Analyzing Interface Objects in the ESR: Data Types              |
| 5 | Lesson: Analyzing Interface Objects in the ESR: Message Types           |
| 5 | Lesson: Maintaining Interface Objects                                   |
| 5 | Lesson: Defining Message Processing Types and Quality of Services (QoS) |

### 7 Unit 4: Object Mapping in the Enterprise Service Repository (ESR)

- |   |   |
|---|---|
| 7 | Lesson: Creating Message Mapping Objects    |
| 7 | Lesson: Mapping Multiple Service Interfaces |

### 9 Unit 5: Configuration of Integration Directory (ID) Objects

- |   |  |
|---|--|
| 9 | Lesson: Creating Communication Channels in the Integration Directory (ID)                      |
| 9 | Lesson: Creating and Deploying Integration Flows to the Advanced Adapter Engine Extended (AEX) |
| 9 | Lesson: Validating XML   |

<b>11</b>	<b>Unit 6:</b>	<b>SAP Process Integration Operations</b>
11		Lesson: Using the Process Integration Monitoring (PIMon) Home
11		Lesson: Using the SAP NetWeaver Administrator
11		Lesson: Explaining Logging and Staging
<b>13</b>	<b>Unit 7:</b>	<b>Connectivity Options for SAP Process Integration</b>
13		Lesson: Analyzing Connectivity Options Between Back-End Systems with SAP Process Integration
<b>15</b>	<b>Unit 8:</b>	<b>HTTP Connectivity Options</b>
15		Lesson: Using the HTTP_AAE (Java) Adapter
15		Lesson: Configuring the Simple Object Access Protocol (SOAP) Adapter
15		Lesson: Using Proxy Technology
15		Lesson: Using Web Services
<b>17</b>	<b>Unit 9:</b>	<b>File Adapter Configuration</b>
17		Lesson: Configuring the Receiver File Adapter
17		Lesson: Configuring a Sender File Adapter
<b>19</b>	<b>Unit 10:</b>	<b>SAP Process Integration Test Tool</b>
19		Lesson: Explaining the Architecture of the PIT Tool
19		Lesson: Setting Up the PIT Landscape
19		Lesson: Creating Test Cases
19		Lesson: Performing Verification
19		Lesson: Managing Jobs
19		Lesson: Executing Tests Using the Web-Based User Interface
<b>21</b>	<b>Unit 11:</b>	<b>Execution of Cloud Integration Content with SAP PI</b>
21		Lesson: Describing Integration Challenges
21		Lesson: Introducing SAP BTP - Integration Suite
21		Lesson: Using the Cloud Integration Content Management Cockpit
21		Lesson: Using Monitoring
<b>23</b>	<b>Unit 12:</b>	<b>Other Connectivity Options</b>
23		Lesson: Explaining Other Connectivity Options
23		Lesson: Using the REST Adapter
<b>25</b>	<b>Unit 13:</b>	<b>Advanced Mapping Concepts</b>
25		Lesson: Using Context in Message Mapping
25		Lesson: Mapping Multiple Messages

# Course Overview

## **TARGET AUDIENCE**

This course is intended for the following audiences:

- Project Manager
- Application Consultant
- Development Consultant
- Technology Consultant
- Super / Key / Power User
- Developer
- Enterprise Architect
- Solution Architect
- System Administrator
- System Architect





## Lesson 1: Explaining how the Recent Rebranding Displays in This Material

### Lesson Objectives

After completing this lesson, you will be able to:

- Explain how the recent rebranding displays in this material

## Lesson 2: SAP Business Technology Platform (BTP)

### Lesson Objectives

After completing this lesson, you will be able to:

- Explain the SAP Business Technology Platform

## Lesson 3: Explaining the Enterprise Service Bus

### Lesson Objectives

After completing this lesson, you will be able to:

- Explain the Enterprise Service Bus

## Lesson 4: Describing SAP Process Integration Architecture

### Lesson Objectives

After completing this lesson, you will be able to:

- Explain SAP Process Integration architecture
- Navigate to the Enterprise Services Repository (ESR)
- Navigate to the Integration Builder
- Configure the Integration Designer in Eclipse

## Lesson 5: Using the SAP NetWeaver Developer Studio (NWDS) 7.5

### Lesson Objectives

After completing this lesson, you will be able to:

- Work with SAP NWDS 7.5

## **Lesson 6: Explaining the Uses and Functionality of SAP Process Orchestration and the Advanced Adapter Engine (AEX)**

### **Lesson Objectives**

After completing this lesson, you will be able to:

- Explain SAP Process Orchestration and the Advanced Adapter Engine (AEX)

### **Lesson 1: Maintaining Products and Software Components in the System Landscape Directory (SLD)**

#### **Lesson Objectives**

After completing this lesson, you will be able to:

- Use product and software component terminology
- Create products and software components in the System Landscape Directory (SLD)
- Import Software Components from SLD into the Enterprise Service Repository (ESR)

### **Lesson 2: Implementing Technical Systems in the SLD**

#### **Lesson Objectives**

After completing this lesson, you will be able to:

- Implement technical systems in the System Landscape Directory (SLD)
- Maintain the SAP NetWeaver Application Server for Java in the SLD
- Create Third-Party Technical Systems in the SLD

### **Lesson 3: Maintaining Business Systems for use in the Integration Directory (ID)**

#### **Lesson Objectives**

After completing this lesson, you will be able to:

- Maintain Business Systems in the SLD
- Import a business system into the SLD



## UNIT 3

# Interface Objects in the Enterprise Service Repository (ESR)

### Lesson 1: Listing Options for Navigating the ESR

#### Lesson Objectives

After completing this lesson, you will be able to:

- Use the Enterprise Services Browser in Enterprise Services Repository Perspective in SAP NWDS
- Access the ESR objects
- Search the ESR objects

### Lesson 2: Analyzing Interface Objects in the ESR: Data Types

#### Lesson Objectives

After completing this lesson, you will be able to:

- Display data types

### Lesson 3: Analyzing Interface Objects in the ESR: Message Types

#### Lesson Objectives

After completing this lesson, you will be able to:

- Create message types

### Lesson 4: Maintaining Interface Objects

#### Lesson Objectives

After completing this lesson, you will be able to:

- Create interface objects
- Import Interface Objects into the ESR

### Lesson 5: Defining Message Processing Types and Quality of Services (QoS)

#### Lesson Objectives

After completing this lesson, you will be able to:

- Define the QoS and message processing types

## UNIT 4

# Object Mapping in the Enterprise Service Repository (ESR)

### Lesson 1: Creating Message Mapping Objects

#### Lesson Objectives

After completing this lesson, you will be able to:

- Display a message mapping
- Create message mappings

### Lesson 2: Mapping Multiple Service Interfaces

#### Lesson Objectives

After completing this lesson, you will be able to:

- Create an operation mapping in the ESR





## Lesson 1: Creating Communication Channels in the Integration Directory (ID)

### Lesson Objectives

After completing this lesson, you will be able to:

- Create a communication channel

## Lesson 2: Creating and Deploying Integration Flows to the Advanced Adapter Engine Extended (AEX)

### Lesson Objectives

After completing this lesson, you will be able to:

- Create an AEX integration flow

## Lesson 3: Validating XML

### Lesson Objectives

After completing this lesson, you will be able to:

- Validate XML



## Lesson 1: Using the Process Integration Monitoring (PIMon) Home

### Lesson Objectives

After completing this lesson, you will be able to:

- Access SAP Process Integration Monitoring

## Lesson 2: Using the SAP NetWeaver Administrator

### Lesson Objectives

After completing this lesson, you will be able to:

- Use the SAP NetWeaver Administrator functionality

## Lesson 3: Explaining Logging and Staging

### Lesson Objectives

After completing this lesson, you will be able to:

- Explain the difference between logging and staging
- Configure the logging and staging behavior



## Lesson 1: Analyzing Connectivity Options Between Back-End Systems with SAP Process Integration

### Lesson Objectives

After completing this lesson, you will be able to:

- Use different adapters



## Lesson 1: Using the HTTP\_AAE (Java) Adapter

### Lesson Objectives

After completing this lesson, you will be able to:

- Use the HTTP\_AAE (Java) adapter

## Lesson 2: Configuring the Simple Object Access Protocol (SOAP) Adapter

### Lesson Objectives

After completing this lesson, you will be able to:

- Configure the SOAP sender adapter
- Configure the SOAP receiver adapter

## Lesson 3: Using Proxy Technology

### Lesson Objectives

After completing this lesson, you will be able to:

- Use the proxy configuration
- Use the server proxy
- Use the client proxy
- Analyze the proxy configuration

## Lesson 4: Using Web Services

### Lesson Objectives

After completing this lesson, you will be able to:

- Use web services
- Create a web service based on proxy technology





## Lesson 1: Configuring the Receiver File Adapter

### Lesson Objectives

After completing this lesson, you will be able to:

- Configure the receiver File/FTP adapter

## Lesson 2: Configuring a Sender File Adapter

### Lesson Objectives

After completing this lesson, you will be able to:

- Configure the sender file adapter



## Lesson 1: Explaining the Architecture of the PIT Tool

### Lesson Objectives

After completing this lesson, you will be able to:

- Describe the architecture of the PIT tool

## Lesson 2: Setting Up the PIT Landscape

### Lesson Objectives

After completing this lesson, you will be able to:

- Set up the PIT landscape

## Lesson 3: Creating Test Cases

### Lesson Objectives

After completing this lesson, you will be able to:

- Create and execute a test case

## Lesson 4: Performing Verification

### Lesson Objectives

After completing this lesson, you will be able to:

- Perform verification

## Lesson 5: Managing Jobs

### Lesson Objectives

After completing this lesson, you will be able to:

- Work with jobs

## Lesson 6: Executing Tests Using the Web-Based User Interface

### Lesson Objectives

After completing this lesson, you will be able to:

- Use the web-based user interface

## Lesson 1: Describing Integration Challenges

### Lesson Objectives

After completing this lesson, you will be able to:

- Describe the integration challenges

## Lesson 2: Introducing SAP BTP - Integration Suite

### Lesson Objectives

After completing this lesson, you will be able to:

- Describe the basics of SAP BTP - Integration Suite

## Lesson 3: Using the Cloud Integration Content Management Cockpit

### Lesson Objectives

After completing this lesson, you will be able to:

- Use the Cloud Integration Management Cockpit

## Lesson 4: Using Monitoring

### Lesson Objectives

After completing this lesson, you will be able to:

- Use the monitoring



## Lesson 1: Explaining Other Connectivity Options

### Lesson Objectives

After completing this lesson, you will be able to:

- Explain other connectivity options

## Lesson 2: Using the REST Adapter

### Lesson Objectives

After completing this lesson, you will be able to:

- Use the REST adapter
- Expose a function module as RESTful service
- Consume a synchronous RESTful service





## Lesson 1: Using Context in Message Mapping

### Lesson Objectives

After completing this lesson, you will be able to:

- Explain queues in message mapping
- Explain the impact of context selection and deletion
- Use the message-mapping debug process

## Lesson 2: Mapping Multiple Messages

### Lesson Objectives

After completing this lesson, you will be able to:

- Map multiple messages